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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,298	12/18/2001	Matthew B. Donatucci	ATMI-514	1697
<div>7590 07/12/2007 Advanced Technology Materials 7 Commerce Drive Danbury, CT 06810-4169</div>				
			EXAMINER BUEKER, RICHARD R	
			ART UNIT 1763	PAPER NUMBER
			MAIL DATE 07/12/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/022,298	Applicant(s) DONATUCCI ET AL.	
	Examiner Richard Bueker	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 15-24 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-7 and 11 is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-10, 12-14 and 25-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1763

Claims 1-4, 8-10, 12, 13, 14 and 25-28 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites "(a) vaporizer comprising . . . a valved outlet passage . . . wherein said vaporizer has no internal moving or rotating surfaces". It is noted that the "valved outlet passage" refers to the shut-off valve 26 of applicants' Fig. 1. These recited limitations are inconsistent with each other because the recited valve in the outlet passage includes internal moving or rotating surfaces, and thus it contradicts the newly added limitation of "wherein said vaporizer has no internal moving or rotating surfaces". Also, claim 25 recites "a vaporizing and deposition system comprising . . . an actuatable outlet . . . wherein said vaporizing and deposition system has no internal moving or rotating surfaces". The recited actuatable outlet also refers to the shut-off valve 26 of applicants' Fig. 1. These recited limitations are inconsistent with each other because the recited "actuatable outlet" includes internal moving or rotating surfaces, and thus it contradicts the newly added limitation of "wherein said vaporizing and deposition system has no internal moving or rotating surfaces".

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 8-10, 12, 13, 14 and 25-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Stall (5,336,324) or Nagashima (6,473,564), either one taken in view

Art Unit: 1763

of Mori (JP 04-228562) and Barr (2,447,789). Stall (see Figs. 14b and 17a, for example) and Nagashima (see Fig. 3, for example) each discloses a vaporizer comprising a vaporizer chamber having an interior space for accumulation of vapor, a heating device for applying heat to the vaporizer chamber, a removable sealing lid positioned on the vaporizer container, and a valved outlet positioned in the sealing lid. The vaporizer of each of Stall and Nagashima is an effusion cell for vacuum evaporation of the type used for physical vapor deposition (PVD). The vaporizer chambers of Stall and Nagashima don't have a block with wells as presently claimed. Mori (see abstract and Fig. 1) and Barr (see Figs. 1 and 2, for example) also disclose vaporizers comprising a vaporizer chamber having an interior space for accumulation of vapor and a heating device for applying heat to the vaporizer chamber. Mori's vaporizer chamber in particular includes a sealing lid having an opening, wherein the sealing lid forms a vapor accumulation space as in Stall and Nagashima. Also, the vaporizer of Mori and Barr is a PVD effusion cell for vacuum evaporation. Mori and Barr teach that material can be vaporized more efficiently by providing the vaporizer chamber in the form of a thermally conductive block having wells. The material to be vaporized is placed in the wells. Mori and Barr teach that this arrangement increases the surface area of thermal contact between the interior surface of the heated vaporizer chamber and the material to be vaporized, and therefore heats and vaporizes the material more efficiently. It would have been obvious to one skilled in the art to modify the vaporizer container of Stall or Nagashima by providing it in the form of a block having wells because Mori and Barr teach that this arrangement heats and vaporizes more efficiently. Regarding the

Art Unit: 1763

use of a thermocouple for controlling the temperature of the crucible, both Stall (see Fig. 14a and col. 25, lines 34-51) and Nagashima (see Fig. 2 and the paragraph bridging cols. 9 and 10) teach the use of a thermocouple to control the temperature of the crucible in the conventional way. Also, regarding the use of a heating resistor to heat the crucible, it would have been obvious to one skilled in the art to modify the embodiment of Fig. 3 of Nagashima by using a heating resistor of the type shown in Fig. 2 of Nagashima.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stall (5,336,324) taken in view of Mori (JP 04-228562) and Barr (2,447,789) for the reasons stated above, and taken in further view of Witzman (6,202,591). Witzman (see the col. 15, line 57 to col. 16, line 10, for example) teaches that it is desirable to form a vacuum evaporated coating by subliming a fluorine containing source material, and it would have been obvious to one skilled in the art to use the vacuum evaporation apparatus of Stall to form the coating desired by Witzman.

Claims 5-7 and 11 are considered allowable over the prior art of record.

Applicants have argued that the newly added limitation of "said lid having a single outlet port therein for flow out of the closed vessel" distinguishes over Stall's Fig. 14b embodiment. It is noted, however, that while claim 1 now recites "a single outlet port", the "comprising" language used in claim 1 allows for the claim to include other outlet ports in addition to the recited single outlet port. See *In re Crish*, 73 USPQ2d 1364.

Applicants have argued that the newly added limitation of "wherein said vaporizer has no internal moving or rotating surfaces" distinguishes over Stall's Fig. 17a

embodiment, because the shaft 1218, valve 1234 and stepper motor 1232 are moving parts. It is noted, however, that while these parts are moving part during time in which they are actuated, they are not moving during a deposition process when vapor is flowing through the outlet, or after a deposition process when no vapor is flowing. During these times the vaporizer does not include moving parts as claimed.

Applicants have argued that if the vaporizer of Nagashima were modified according to the teachings of Mori, Nagashima's vaporizer would have multiple release openings. It is noted, however, that the obviousness rejection only requires that Nagashima's vaporizer be modified by providing it with wells as taught by Mori. Also, as noted above, while claim 1 now recites "a single outlet port", the "comprising" language used in claim1 allows for the claim to include other outlet ports in addition to the recited single outlet port. See *In re Crish*, 73 USPQ2d 1364.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1763

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (571) 272-1431. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Richard Bueker
Primary Examiner
Art Unit 1763